**Lecture Schedule**

**Department of Computer Science Engineering & Information Technology**

# Branch & Section : IV B.Tech - II Sem – CSE-2 Regulation : R13

**Subject : Cloud Computing Academic Year : 2014 -2018**

**Name of the Faculty : Ch. Gopika**

**Course Objectives**

At the end of the course:

The student will learn about the cloud environment, building software systems and components

That scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models

Including Iaas,Paas,Saas, and developing cloud based software applications on top of cloud platforms.

**Course Outcomes:**

After completing this course the student must demonstrate the knowledge and ability to:

1. Understanding the key dimensions of the challenge of Cloud Computing

2. Assessment of the economics, financial, and technological implications for selecting cloud computing for

Own organization

3. Assessing the financial, technological, and organizational capacity of employer’s for actively initiating and

Installing cloud-based applications.

4. Assessment of own organizations’ needs for capacity building and training in cloud computing-related IT

Areas

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| --- | --- | --- | --- |
| **Unit No.** | **Topic No.** | **Name of the Concept** | **No. of Classes Required** |
| **Unit – I: Systems modelling, Clustering and virtualization** | | | |
| **Unit - I** | 1 | Scalable Computing over the Internet | 1 |
| 2 | Technologies for Network based systems | 3 |
| 3 | System models for Distributed and  Cloud Computing | 2 |
| 4 | Software environments for distributed systems and clouds | 2 |
| 5 | Performance, Security And Energy  Efficiency | 2 |
| **Total number of hours** | | | **10** |
| **Unit – II:** **Virtual Machines and Virtualization of Clusters and Data Centers** | | | |
| **Unit – II** | 1 | Implementation Levels of Virtualization | 2 |
| 2 | Virtualization Structures/ Tools and mechanisms | 2 |
| 3 | Virtualization of CPU | 1 |
| 4 | Memory and I/O Devices | 1 |
| 5 | Virtual Clusters and Resource Management | 1 |
| 6 | Virtualization for Data -Center Automation | 2 |
| **Total number of hours** | | | **9** |
| **Unit – III:** **Cloud Platform Architecture** | | | |
| **Unit – III** | 1 | Cloud Computing and service Models | 2 |
| 2 | Architectural Design of Compute and Storage Clouds | 2 |
| 3 | Public Cloud Platforms | 2 |
| 4 | Inter Cloud Resource Management | 1 |
| 5 | Cloud Security and Trust Management | 1 |
| 6 | Service Oriented Architecture | 2 |
| 7 | Message Oriented Middleware | 1 |
| **Total number of hours** | | | **11** |
| **Unit – IV:** **Cloud Programming and Software Environments** | | | |
| **Unit – IV** | 1 | Features of Cloud and Grid Platforms | 1 |
| 2 | Parallel & Distributed Programming Paradigms | 2 |
| 3 | Programming Support of Google App Engine | 1 |
| 4 | Programming on Amazon AWS and Microsoft Azure | 2 |
| 5 | Emerging Cloud Software Environments | 2 |
| **Total number of hours** | | | **8** |
| **Unit – V: Cloud Resource Management and Scheduling** | | | |
| **Unit – V** | 1 | Policies and Mechanisms for Resource Management Applications of Control Theory to Task Scheduling on a Cloud | 2 |
| 2 | Stability of a Two Level Resource Allocation Architecture | 1 |
| 3 | Feedback Control Based on Dynamic Thresholds | 2 |
| 4 | Coordination of Specialized Autonomic Performance Managers | 2 |
| 5 | Resource Bundling | 1 |
| 6 | Scheduling Algorithms for Computing Clouds | 3 |
| 7 | Fair Queuing, Start Time Fair Queuing | 1 |
| 8 | Borrowed Virtual Time | 1 |
| 9 | Cloud Scheduling Subject to Deadlines | 1 |
| 10 | Scheduling MapReduce Applications Subject to Deadlines | 1 |
| **Total number of hours** | | | **15** |
| **Unit – VI:** **Storage Systems** | | | |
| **Unit – VI** | 1 | Evolution of storage technology | 2 |
| 2 | storage models | 1 |
| 3 | file systems and database | 1 |
| 4 | distributed file systems, general parallel file systems | 1 |
| 5 | Google file system | 1 |
| 6 | Apache Hadoop, BigTable | 1 |
| 7 | Megastore | 1 |
| 8 | Amazon Simple  Storage Service(S3) | 2 |
| **Total number of hours** | | | **10** |

**Overall Number of classes required: 63**

**Text Books:**

1. Distributed and Cloud Computing, Kai Hwang, Geoffry C. Fox, Jack J. Dongarra MK Elsevier.

2. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.

3. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, University Press

**References:**

1. Cloud Computing, A Practical Approach, Anthony T Velte, Toby J Velte, Robert Elsenpeter, TMH

2. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christen

vecctiola, S Tammarai selvi, TMH

Ch. Gopika

**Signature of Faculty**